

## CLAIMS

I claim:.

1. A process for hydrogenating a hydrocarbon fuel, comprising the steps of;  
providing a receptacle;  
partly filling said receptacle with an aqueous solution containing sodium hydroxide;  
introducing aluminum in said aqueous solution, thereby producing hydrogen gas, and  
injecting said hydrogen gas into a fuel line containing said hydrocarbon fuel.
2. A process for hydrogenating a hydrocarbon fuel, comprising the steps of;  
providing a receptacle;  
partly filling said receptacle with an aqueous solution containing sodium hydroxide;  
introducing said hydrocarbon fuel inside said receptacle atop said aqueous solution;  
introducing aluminum in said aqueous solution, thereby producing hydrogen gas, and  
bubbling said hydrogen gas through said hydrocarbon fuel.
3. An apparatus for hydrogenating a hydrocarbon fuel, comprising;  
a receptacle;  
means to introduce an aqueous solution in said receptacle and to maintain said solution at a level;

means to introduce aluminum inside said receptacle below said level, and

means to float and circulate a hydrocarbon fuel inside said receptacle above said level.

4. The apparatus as claimed in **claim 3**, further comprising means to introduce makeup water in said receptacle.
5. The apparatus as claimed in **claim 3**, further comprising means to recover precipitates from said receptacle.
6. The apparatus as claimed in **claim 3**, wherein said means for introducing aluminum comprises a hopper mounted above said receptacle, a rotary feeder below said hopper and an aluminum delivery pipe extending from said rotary feeder into said receptacle below said level.
7. The apparatus as claimed in **claim 6**, further comprising means for circulating an aqueous solution in said aluminum delivery pipe.
8. The apparatus as claimed in **claim 3**, further comprising a horizontal screen mounted inside said receptacle below said level.
9. The apparatus as claimed in **claim 8**, wherein further comprising means for rotating said screen along a horizontal plane.
10. The apparatus as claimed in **claim 3**, further comprising means for recovering hydrogen gas from said receptacle.